



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

Street address: 629 East Main Street, Richmond, Virginia 23219

Mailing address: P.O. Box 1105, Richmond, Virginia 23218

TDD (804) 698-4021

www.deq.virginia.gov

L. Preston Bryant, Jr.
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4000
1-800-592-5482

MEMORANDUM

TO: State Water Control Board

FROM: Ellen Gilinsky, Ph.D., Director, Water Division

DATE: June 18, 2009

SUBJECT: Consideration of Petition to Designate a Portion of the Dan River as Public Water Supply

EXECUTIVE SUMMARY

Staff intends to ask the Board at their July 27, 2009 meeting to initiate a rulemaking to consider amending the Water Quality Standards regulation to designate an approximately one mile segment of the Dan River as a Public Water Supply (PWS).

BACKGROUND

Due to concerns prompted by the extreme drought of 2002 and the Homeland Security Act which encourages localities to develop alternative water supply sources and inter-local connections for emergency use, a raw water intake to provide drinking water for the city of Roxboro, NC is proposed for the Dan River near the town of Milton, NC approximately 13 miles downriver from Danville and approximately 25 miles upriver from South Boston. The intake was originally planned for 30 million gallons/day (MGD) but in 2002 Danville, VA expressed concern to the NC Department of Environment and Natural Resources and Roxboro that 30 MGD was excessive. The proposed withdrawal was reduced to 10 MGD. Discharge water would be returned to a tributary of the Dan River several miles below the intake. This tributary flows into the Dan River at a point about 30 miles below the proposed intake.

At the Board's April 27, 2009 meeting, staff presented to the Board a petition [**Attachment 1**] from the City of Roxboro, North Carolina to designate the Dan River from the VA/NC line upriver for approximately one mile as a public water supply. **Attachment 2** shows a map of the

proposed segment for PWS designation. A petition notice was published in the Virginia Register on May 25, 2009 and the comment period ended June 15. Comment was received from the City of Danville, the Town of Halifax, Halifax County, and the Town of South Boston.

North Carolina water quality standards require PWS protections to extend 10 miles upriver from the intake. The one mile segment of the Dan River in Virginia being petitioned for PWS designation is necessary to meet that requirement. Roxboro is requesting PWS protection in accordance with Virginia's water quality standards regulation and not North Carolina's.

LOCALITY COMMENT

Although comment received did not directly address the need for a PWS designation on the Dan River, several Virginia localities have expressed concern regarding the necessity of the raw water intake.

Concerns as stated by Danville – (1) close proximity to their wastewater treatment facility discharge; (2) taking water out from one location and putting it back at another downstream; (3) possibility of more stringent limits for the WWTF discharge; (4) need for the water has not been documented; and (5) possible selling of the water to other localities in NC.

Joint resolution provided by Halifax County Board of Supervisors, Town Council of Halifax, Town Council of South Boston

They oppose the manner/location in which the water is returned to the Dan River. The proposed intake is near Milton, NC and the existing waste water treatment facility discharge that would accommodate the removed water returns it to a tributary to the Dan River approximately 30 miles downriver. This effectively bypasses the above named localities. They are concerned the bypass will reduce water supplies that serve existing and future residential, commercial, industrial, agricultural, and recreational uses. They state mitigation can be achieved by returning treated waste water from the withdrawal back to the river in the vicinity of Milton.

STAFF COMMENTS

The petition received from the City of Roxboro requests a PWS designation for a one mile segment of the Dan River. Opposing comment received from localities is directed towards the necessity of the proposed intake, additional restrictions for upstream WWTF discharges, the proposed amount of water to be withdrawn, and/or the location of the waters return. Staff believes the rulemaking process, including the two comment periods for the notice of intended regulatory action (NOIRA) and notice of public comment (NOPC), will provide sufficient opportunity to determine if a PWS designation is warranted.

STAFF RECOMMENDATION

Staff recommends the Board direct staff to initiate a rulemaking to consider designation of a one mile segment of the Dan River as a public water supply.

Presenter Contact Information:

Alan Pollock, Manager, Office of Water Quality Programs

Phone: (804)698-4002

Email: Alan.Pollock@deq.virginia.gov

Attachments to this memo to aid in your review of these regulatory amendments are as follows:

Attachment 1: Copy of the petition

Attachment 2: Map of the Dan River segment petitioned for PWS designation



City of Roxboro

Petition for Classification of Dan River

City of Roxboro, NC - Raw Water Intake

Co Petitioners Town of Yanceyville, NC, Caswell County, NC and Person County, NC

Purpose

The City of Roxboro NC is proposing a raw water intake on the Dan River approx. 3,200 ft. upstream of NC Hwy 62. Within a ten mile radius of the intake structure the Dan River meanders from North Carolina into Virginia for a distance of approximately one mile. Refer to attached "Figure No. 1". The State of North Carolina is currently processing a reclassification of the Dan River in North Carolina and is requesting Virginia take the necessary steps to protect the quality of water in the Virginia within the ten mile run of the river. The legal authority for DEQ to take action to amend the WQS is 62.1-44.15 of the Code of Virginia. The method to petition follows the Virginia Administrative Code VA WQS, 9VAC 25-260 and 9VAC 25-11-60.

Petitioner's Identification

City of Roxboro
PO Box 128
Roxboro, North Carolina 27573-0128

Contact: Mr. Tom Brown
Mayor

Phone No.: 336-599-3116

Statement of Need and Justification

The extreme drought of 2002 and Homeland Security Act have prompted public water providers throughout the state of North Carolina to develop alternative water supply sources and inter-local connections for emergency use. Another severe drought, loss of a dam due to hurricane or vandalism, or contamination incident could render one or more existing water supply sources in Person County or Caswell County temporarily or permanently unusable. Consequently, need for the project must consider the possibility that the proposed Dan River intake could be a sole source supply for these two counties and their three municipalities should their existing reservoirs or wells be

damaged or depleted. In addition, existing water supply sources may be inadequate if one or more major bulk water customers locate in Person County or Caswell County.

Roxboro/Person County Existing Water Supplies

Roxboro's two existing raw water sources are Lake Isaac Walton (Roxboro City Lake), and impoundment on Storys Creek with 10 square miles drainage basin area (dba), and South Hyco Creek, with 56 square miles dba at the intake. The South Hyco Creek intake is located near the US 158 bridge, four miles downstream of Lake Roxboro (23 square miles (dba) and one mile upstream of Hyco Lake. Storys Creek and South Hyco are both tributaries of Hyco River, which flows into Kerr Lake in Virginia, 25 miles below Hyco Lake Dam. The South Hyco Creek intake pumps raw water eastward to Satterfield Creek upstream of Lake Isaac Walton (City Lake), and from there water is pumped to Roxboro's 8.0 MGD municipal WTP located one mile southeast of Lake Isaac Walton. No modifications to the existing intakes and pump facilities are included in this project.

The South Hyco Creek and Storys Creek watersheds are in the Carolina Slate Belt hydrologic area, with mean annual stream flow averaging 0.9 cfs per square mile and 7Q10 base flow averaging 0.005 cfs per square mile. These are among the lowest average flows and base flows in North Carolina. The 20-year safe yield flows calculated for Roxboro's existing intakes are 3.20 MGD at Lake Isaac Walton and 7.80 MGD at South Hyco Creek, providing a combined safe yield of 11.0 MGD. The safe yield of these sources will decrease as storage volume is gradually lost due to sediment accumulation.

Yanceyville/Caswell County Existing Water Supplies

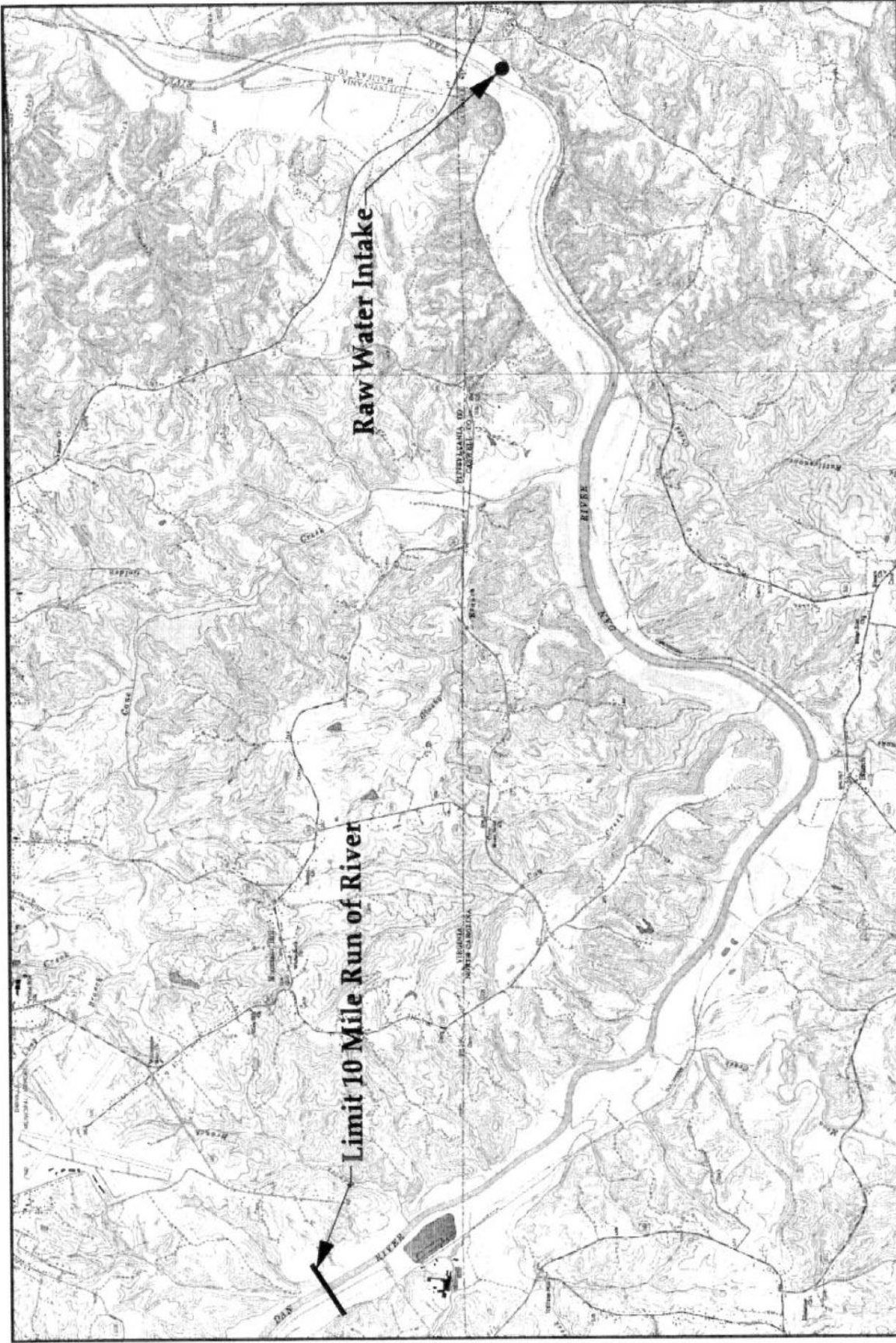
Yanceyville's primary raw water supply reservoir is Farmer Lake, and impoundment on Country Line Creek with 46.5 square miles dba and usable storage capacity of 1.0 billion gallons. The source has largely replaced the Town's older Fuller Creek reservoir with a 1.7 square miles dba. Fuller Creek reservoir is available for emergency use but is not routinely used due to its limited yield and generally poorer water quality. Water flows by gravity from Farmer Lake to a pump station beside Fuller Creek reservoir. From this point it is pumped to the Towns WTP. A prolonged drought or the needs of major bulk water customer could lower the water level in Farmer Lake to an elevation at which gravity flow to the pump station would be inadequate. Yanceyville has no raw or potable water connection with other local governments, and Caswell County has no public water system.

Growth and Water Demand

Roxboro's and Yanceyville's water demand is expected to increase due to residential, commercial and industrial growth in the existing service area. Initially the proposed Dan River raw water intake will serve as an emergency connection when and if a condition exists that prevents use of the current facilities the supplemental source will be obtained from the Dan River Intake.

Summary

The City of Roxboro and its regional partners are requesting the State of Virginia assistance in protecting the waters of the Dan River within a ten mile run of the river from the proposed intake site located in North Carolina. The State of North Carolina is currently processing a reclassification of the Dan River within North Carolina to a WS-IV and petition Virginia to amend current regulations to protect the Dan River for approximately one mile in Virginia.



City of Roxboro
Dan River Raw Water Intake



Figure No. 1

2005037

Attachment 2

